CLAIMS

1. A method for making a sheet with a plurality of windings of a conductive wire, said method comprising the steps of:

- covering a part of an outer surface of a mandrel with a non-adhesive layer;

- covering a part of an outer surface of the non-adhesive layer with an adhesive layer,

- coiling the wire onto an outer surface of the adhesive layer to form a wire coil in contact with the adhesive layer,

- removing the wire coil and at least a part of the adhesive layer from the mandrel, and

- flattening the wire coil to form a sheet structure comprising two layers of windings being joined by the adhesive layer.

2. A method according to claim 1, wherein the non-adhesive layer is a flexible sheet material.

3. A method according to claims 1-2, wherein the adhesive layer is made of a resilient glue material.

4. A method according to any of the preceding claims, wherein at least a part of the non-adhesive layer is removed from the mandrel together with the wire coil and adhesive layer, and wherein the non-adhesive layer is

removed to expose the adhesive layer prior to the flattening of the wire coil.

5. A method according to any of the preceding claims, further comprising the step of applying at least one elongate stripe of a sheet material to an outer surface of the adhesive layer.

6. A method according to claim 5, wherein the stripe is applied in an axial direction of the wire coil to extend from one axial end portion to an opposite axially disposed end portion thereof.

7. A method according to claims 5-6, wherein the stripe is more rigid than the non-adhesive layer.

8. A method according to claim 7, wherein the stripe is made from a material selected from the group consisting of glass fibres, carbon fibres, epoxy, polyester, steel, wires of steel and any composition thereof.

9. A method according to any of the preceding claims, wherein a redial dimension of the mandrel is reduced prior to the removing of the wire coil and at least a part of the adhesive layer form the mandrel.

10. A method according to any of the preceding claims, further comprising the step of expanding the wire coil prior to the flattening by inserting elongate expanding elements into the wire coil and by moving the expanding elements away from each other.

11. A method according to any of the preceding claims, further comprising the step of rolling the sheet into a tubular coil element.

12. A method according to claim 11, wherein the rolling of the sheet into a tubular coil element is performed by fastening an end portion of the sheet structure to a mandrel and by subsequent rolling of the sheet structure around the mandrel.

13. A method according to any of claims 11-12, further comprising the step of applying an adhesive layer to at least one of

- a surface of the tubular coil element, and

- a surface of a corresponding core,

prior to joining the coil element and the core element to form a stator or a rotor for an electrical motor.

14. A method according to claim 13, wherein the tubular coil element is expanded into close contact with an inner surface of the tubular core element.

15. A method according to any of claims 11-14, wherein edge portions of at least two sheet structures are joined to form one unified sheet structure prior to the rolling of the unified sheet structure into a tubular coil element.

16. A method according to any of the preceding claims, wherein the flattening of the wire coil to form a sheet

structure comprising two layers of windings comprises the steps of:

- fastening a peripheral outer surface of the wire coil to a mandrel, and

- rolling the wire coil around the mandrel to tilt and flatten the wire coil.

17. A method according to any of the preceding claims, wherein the non-adhesive layer and the adhesive layer is applied to the mandrel in one operation in the form of a glue transferring tape with the adhesive layer pre-applied to a non-adhesive layer.

18. A method according to any of the preceding claims, wherein the adhesive layer comprises a resilient glue material which is based on a material selected from the group consisting of rubber or wherein the glue material is based on acrylate or acrylic acid.

19. A flexible wire coil for an electrical motor and comprising a plurality of windings made form an insulated electrically conductive wire, each winding being adhesively joined to adjacent windings by a resilient glue material.

20. A coil according to claim 19, wherein the wire coil is flattened to form a sheet structure comprising two layers of windings.

21. A coil according to claim 20, wherein the sheet structure is rolled and wherein opposite peripheral end

parts of the sheet are joined to form a flexible tubular coil element.

22. A coil according to claim 21, inserted into and expanded into contact with an inner surface of a tubular core element made from a magnetically conductive material.